

Accelerator Department  
BROOKHAVEN NATIONAL LABORATORY  
Associated Universities, Inc.  
Upton, New York 11973

AGS DIVISION TECHNICAL NOTE

No. 142

AGS INTERNAL TARGETS

E. Gill, S. Naase and J. Gabusi

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Purpose

To run the internal targets at four locations.

The program is call TGT and located in R space R.

The data files are kept in 25, 27.

Locations

At present there are two horizontal locations, and one vertical.  
There are two targets at each location, In out, Top Bottom.

The horizontals are located at J-5 (Beta max) and D-15 (Beta min).  
The vertical target is located at J-19 (Beta max).

Calibration

The position is read in inches, on the target page where 0 is the center position and plus is outside for horizontal and up for vertical.

Operation

The drive is on the target page, CALL RTD15, RTJ05 and RTJ19.

To flip the target, it is necessary to run it from a terminal, and call in the function that is saved for that device. Once it is called and set up it can be switched on and off by target page. No other changes can be made from this page. The only other information on this page is the readbacks which tell the status of the target. The normal reading for a down target is  $500 \pm 200$  counts. An up target  $1500 \pm 200$  count.

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A typical set up is shown on the printout, example A, which gives all the information on how to run and make changes. This set up shows how to flip the J50HI<sup>\*</sup>. The restore routine is used to go out and get the proper function from the data file and put it into either function A or B whichever one has been selected. This is always the first step in selecting a target. Once this is done, any of the routines can be changed by following the help call. The name of the data files are the same as the target page example C. To keep the target in the up position, first go out and get the data file for J50HI, then proceed to example B.

If you need different functions you can save them under different names in the data file and call back at will.

The hardware is arranged in such a way that no two targets on the same drive can be flipped together.

Example D shows a block diagram of the overall system, with drawing numbers for more detailed information.

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\* J50HI (Location at J5 and Horizontal Inside)

R R

EXAMPLE A

#TGT

FUNCTION (A) : A

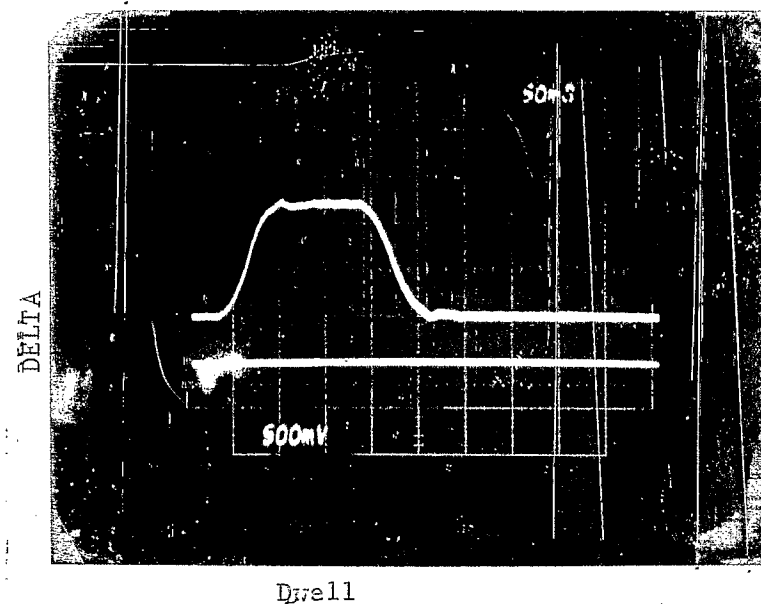
NAME (SPR1) : J5HI

RESTORE

H

<CAR.RET.>	LIST PRESENT SETUP
ON	TURN FUNC. GEN. ON
OFF	TURN FUNC. GEN. OFF
OUTPUT (OUT)	SEND FUNCTION TO GEN
ZERO	ZERO FUNCTION IN MEMORY
FUNCT (FG)	SELECT A FUNCTION GEN
NAME	SELECT A TARGET MOTOR
DEFINE (DEF)	SET TARGET MPX CHN#
SAVE	SAVE FUNCTION ON DISC
RESTORE	GET SAVED FUNC AND OUTP
UP	TGT STARTS UP NOW
DWELL	TGT RESTS FULLY ERECT
DELTA	VARY AMPLITUDES BY N%.
TIME	SET 6 FUNCTIONAL TIMES.
AMP	SET 6 AMPLITUDES

Typical used routine.



TYPICAL TARGET FLIPPING

R R

To Keep target in up position

\*TGT

FUNCTION (A) : A

NAME (SPR1 ) : J50HI

RESTORE

AMP

AMPLITUDES ( *up* *up broke* *Hold* *Down* *Down broke* *Down hold*  
 : 1795, -747, 448, -1495, 298, -372 )  
 : 1000

OUTPUT SENDS ONE VALUE to hold target up.

AMP

AMPLITUDES ( 1000, 0, 0, 0, 0, 0 )  
 : 1000

TIME

TIMES ( 100, 146, 157, 575, 655, 691 )

## EXAMPLE C

RIN	TARGET	SEL	24-JAN-78	11:12	43.1
EQUIPMENT	MODE	COMMAND	READBACK	AT	40
1. 1	D15HO	0	0		
1. 2	D15HI	0	0		
1. 3	J05HO	0	670		
1. 4	J05HI	0	1815		
1. 5	J19UU	0	580		
1. 6	J19UL	0	555		
1. 7	SPAT1	0	0		
1. 8	SPAT2	0	0		
1. 9	TFLPA	SPAT1	6		
1. 10	TFLPB	D15HO	0		
SEB	RTJ05	0	OFF	1869	ON
SEB	RTJ19	0	OFF	2242	ON

1	2	3	4	5	6	7	8
SEL	SET	GETT	SAVT	READ	BACK	NEXT	LIB

EXAMPLE D

BROOKHAVEN NATIONAL LABORATORY

BY E. GIL DATE 1-28  
CHKD. BY DATE

SUBJECT BLANKS DISARM  
INTERNAL TARGETS

SHEET NO. OF  
JOB NO.

DEPT. OR PROJECT

RING

FLIP MOTOR

D11-E82-3

DRIVE MOTOR

6.8A SURGE  
2A D.C

10K 3T

RELAY SW.  
D11-E466-2  
D11-E467-3  
HOLD SUPPLY  
D11-E467-2

D11-E468-2

D09-E834-3

DRIVE AMP  
RELAY SWITCH  
D/A  
A/D  
MPX

Address 0055 PPB J5  
0054 PPB J19  
PPB D15

Address 1367  
1367  
PPC

MPX  
A B

Select Motor

ADDRESS (FUNCTION GEN)  
1376 PPC

FUNCTION GEN D09-E659-3

ADDRESS  
1377 PPC

MPX

READ TPT  
CLT

A  
B  
MCR

Down = 50V ± 2mV  
Up = 150V ± 2mV